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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,503	07/28/2003	Yiu Ming Cheung	P/4076-55	5069
2352	7590	05/31/2005	EXAMINER	
OSTROLENK FABER GERB & SOFFEN 1180 AVENUE OF THE AMERICAS NEW YORK, NY 100368403			COLEMAN, WILLIAM D	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EF

Office Action Summary	Application No. 10/628,503	Applicant(s) CHEUNG ET AL.	
	Examiner W. David Coleman	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-22 is/are pending in the application.
 4a) Of the above claim(s) 11-20 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 2-10 and 21 is/are rejected.
 7) ☒ Claim(s) 22 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

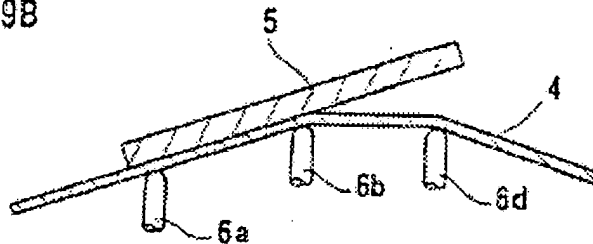
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 21, 2, 6, 7, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishiguchi, European Patent Application Publication EP 0 431 637 A1.

3. Nishiguchi discloses an apparatus as claimed. Please see **FIGS. 1-10**, where Nishiguchi teaches the claimed invention.

Fig. 9B



4. Pertaining to claim 21, Nishiguchi teaches an apparatus for detachment of a thin die from a film, the film having an adhesive surface on which a plurality of dice are mounted, the apparatus comprising:

an ejector device comprising a plurality of ejector pins **6a-6d**;

the ejector pins being operative to initiate detachment of a die from the film by contacting the film under the die on a second surface of the film opposite the adhesive surface substantially

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at the corners of the die within a predetermined distance from the edges of said die and by raising the film under the corners of the die to separate the film under the corners of die is from the die; and

a collect operative to detach the die from the film after detachment has been initiated by the ejector device, an to hold the die after detachment from the film.

5. Pertaining to claim 2, Nishiguchi teaches an apparatus as claimed in claim 21, wherein the predetermined distance is determinable by considering one or more factors in the group consisting of the thickness, size and elastic modulus of the die, the thickness and elastic modulus of the film, the interfacial adhesive strength between the die and the elastic surface of the film and the shape and size of the ejector pin (the Examiner takes the position that since not all dice are the same size and the pins 14 are aligned along the perimeter these factors claimed are considered).

6. Pertaining to claim 6, Nishiguchi teaches an apparatus as claimed in claim 21, including a vacuum ejector platform for supporting a portion of the film on which the die to be detached is mounted while the film is contacted by the ejector device.

7. Pertaining to claim 7, Nishiguchi teaches an apparatus as claimed in claim 6, including apertures corresponding substantially to positions of each corner of the die to be detached, wherein the ejector pins are houseable within the vacuum ejector platform and projectable through said apertures for contacting the die.

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8. Pertaining to claim 8, Nishiguchi teaches an apparatus as claimed in claim 21, wherein the ejector device comprises at least four ejector pins, each ejector pin corresponding to a position substantially at a corner of the die.

9. Pertaining to claim 9, Nishiguchi teaches an apparatus as claimed in claim 8, including one or more ejector pins corresponding to a position substantially at a center portion of the die.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 3, 4, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishiguchi, European Patent Application Publication EP 0 431 637 A1.

12. Given the teaching of the references, it would have been obvious to determine the optimum thickness, temperature as well as condition of delivery of the layers involved. See *In re Aller, Lacey and Hall* (10 USPQ 233-237) "It is not inventive to discover optimum or workable ranges by routine experimentation. Note that the specification contains no disclosure of either the critical nature of the claimed ranges or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 f.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Any differences in the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that

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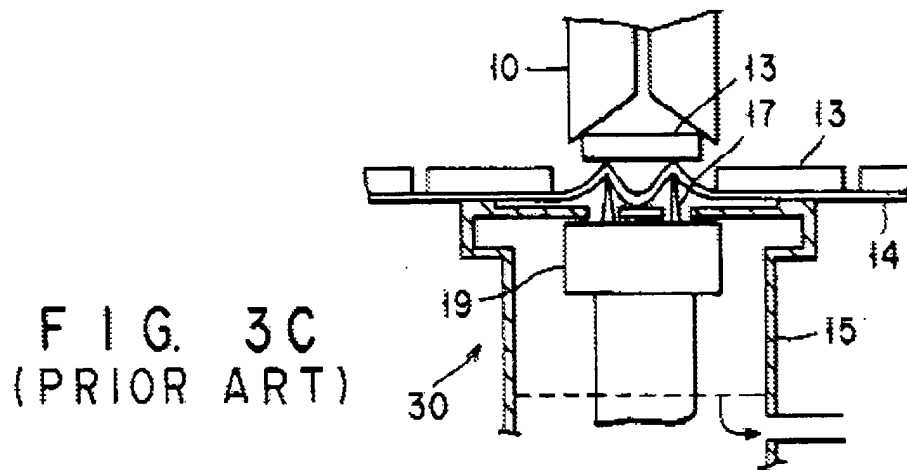
the difference is really unexpected. *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986)

Appellants have the burden of explaining the data in any declaration they proffer as evidence of non-obviousness. *Ex parte Ishizaka*, 24 USPQ2d 1621, 1624 (Bd. Pat. App. & Inter. 1992).

An Affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979).

13. Claims 21, 2, 6, 7, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kurosawa et al., U.S. Patent 6,201,306 B1.

14. Kurosawa discloses an apparatus as claimed. Please see FIGS. 1-31, where Kurosawa teaches the claimed invention.



15. Pertaining to claim 21, Kurosawa teaches an apparatus for detachment of a thin die from a film, the film having a adhesive surface on which a plurality of dice are mounted, the apparatus comprising:

an ejector device comprising a plurality of ejector pins 17;

the ejector pins being operative to initiate detachment of a die from the film by contacting the film under the die on a second surface of the film opposite the adhesive surface substantially at the corners of the die within a predetermined distance from the edges of said die and by raising the film under the corners of the die to separate the film under the corners of die is from the die; and

a collect operative to detach the die from the film after detachment has been initiated by the ejector device, an to hold the die after detachment from the film.

16. Pertaining to claim 2, Kurosawa teaches an apparatus as claimed in claim 21, wherein the predetermined distance is determinable by considering one or more factors in the group consisting of the thickness, size and elastic modulus of the die, the thickness and elastic modulus of the film, the interfacial adhesive strength between the die and the elastic surface of the film and the shape and size of the ejector pin (the Examiner takes the position that since not all dice are the same size and the pins 14 are aligned along the perimeter these factors claimed are considered).

17. Pertaining to claim 6, Kurosawa teaches an apparatus as claimed in claim 21, including a vacuum ejector platform for supporting a portion of the film on which the die to be detached is mounted while the film is contacted by the ejector device.

18. Pertaining to claim 7, Kurosawa teaches an apparatus as claimed in claim 6, including apertures corresponding substantially to positions of each corner of the die to be detached, wherein the ejector pins are houseable within the vacuum ejector platform and projectable through said apertures for contacting the die.

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19. Pertaining to claim 8, Kurosawa teaches an apparatus as claimed in claim 21, wherein the ejector device comprises at least four ejector pins, each ejector pin corresponding to a position substantially at a corner of the die.

20. Pertaining to claim 9, Kurosawa teaches an apparatus as claimed in claim 8, including one or more ejector pins corresponding to a position substantially at a center portion of the die.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. Claims 3, 4, 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurosawa et al., U.S. Patent 6,201,306 B1.

23. Given the teaching of the references, it would have been obvious to determine the optimum thickness, temperature as well as condition of delivery of the layers involved. See *In re Aller, Lacey and Hall* (10 USPQ 233-237) "It is not inventive to discover optimum or workable ranges by routine experimentation. Note that the specification contains no disclosure of either the critical nature of the claimed ranges or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. *In re Woodruff*, 919 f.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Any differences in the claimed invention and the prior art may be expected to result in some differences in properties. The issue is whether the properties differ to such an extent that

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Appellants have the burden of explaining the data in any declaration they proffer as evidence of non-obviousness. *Ex parte Ishizaka*, 24 USPQ2d 1621, 1624 (Bd. Pat. App. & Inter. 1992).

An Affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979).

Objections

24. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

25. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to W. David Coleman whose telephone number is 571-272-1856.

The examiner can normally be reached on 9:00 AM-5:00 PM.

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



W. David Coleman
Primary Examiner
Art Unit 2823

WDC